

Example of a question in Montana's Drivers License Manual:

The sign pictured at the right means that:

- Trucks are permitted on a narrow bridge.
- The bridge ahead is open to one-way traffic only.
- The bridge ahead is wide enough for one car at a time.
- The bridge ahead may be too narrow to meet or pass a truck you must be careful.



MONTANA OUTDOORS MAG APRIL 2011

opportunities for the domestic animals to commingle with wild sheep.

Then there's the problem of human encroachment. New resorts and subdivisions displace wild sheep from historical range and fragment their habitat with access roads. As western Montana's highway traffic grows, so does the number of bighorns ending up as roadkill. In January 2010, despite large warning signs, a truck plowed into a herd on Montana Highway 1 near Anaconda, killing eight wild sheep. In northwestern Montana, more than 400 bighorns from the Thompson Falls herd have died from car and train collisions since 1985.

Another threat to bighorns is deadly disease. A 2010 study by the University of Washington proved that *Mannheimia haemolytica* can be transmitted from domestic sheep to bighorns even when a fence separates the animals. The bacteria, carried by but harmless to domestic sheep, is one of the pathogens that cause pneumonia in bighorns.

The findings validate what biologists have seen for decades as once-robust bighorn herds often succumb to disease after mingling with domestic flocks. Infected ewes that don't die outright produce diseased lambs that perish soon after weaning, causing diminished populations to stagnate for years. In 2009 nearly 90 percent of a 220-bighorn herd in the Elkhorns died from pneumonia. Tom Carlsen, FWP biologist in Townsend and author of the state's new bighorn conserva-



chemical compounds in delcing solution draws bighorns to highways. Despite warning signs, sheep fatalities are common in some areas.

Facing page: Able to leap livestock fences, bighorns often contract disease by mingling with domestic sheep. Says one FWP biologist, "A ram during the rut is a highly effective vector for pneumonia."

tion plan (see sidebar, page 15), says bacteria causing the disease likely came from a handful of sheep allowed to run loose on Bureau of Land Management (BLM) property and adjacent private land. "The sheep producer in the valley had a grazing allotment with the BLM and was doing a good job keeping his animals separate from the bighorns," Carlsen says. "But then someone moved in on a small patented mining claim and brought in a few sheep and goats



that he let roam all over. Sure enough, the bighorns got sick, and within a year we'd lost almost the entire herd."

Global competition and the growth of synthetic fabrics have depressed markets for Montana sheep, reducing numbers from a high of 5 million in 1910 to 300,000 today. But the number of hobby farms that bring tame sheep and goats dangerously close to bighorn range appears to be increasing as subdivisions and ranchettes pop up in mountain foothills. Jim Weatherly, president of the Montana Wild Sheep Foundation, has met with several hobby farmers to explain the risk their animals pose to bighorns. "Most of the time they don't know about the threat and are real concerned," he says.

Many large-scale sheep producers use guard dogs and herders to keep their flocks separate from bighorn herds. But some wool growers lease grazing allotments on national forests and BLM land, where their domestic herds can mingle with bighorns. That troubles sportsmen like Jim Bailey of Belgrade, a retired University of Colorado wildlife biology professor and board member of the Gallatin Wildlife Association. "We think there should be more wild sheep in this region in places like the Snowcrest-Gravelly Range,"

Raising management money

With only about 5,250 bighorn sheep in Montana, FWP can allow hunters to harvest no more than a few hundred rams and ewes each fall. That limits hunting license revenue necessary for monitoring populations and transplanting bighorns to augment existing herds. To generate more wild sheep management money, the Montana legislature authorized auctioning one bighorn license each year and awarding another through the SuperTag lottery. Since 1984 the auction, conducted each spring by the national Wild Sheep Foundation, has generated \$3.7 million (winning bids average \$170,000). The money also helps purchase habitat and hunting lands, such as the Blue-Eyed Nellie Wildlife Management Area near Anaconda, recently expanded from 6 to 460 acres.

The bighorn sheep SuperTag lottery—chances for which cost \$5 each—has brought in more than \$500,000 for game law enforcement and hunter access since starting in 2006.